What is claimed is:

1.   A method of measuring a concentration of dopants of an objective thin film, comprising:

measuring a concentration of dopants of a first wafer;

forming the objective thin film on the first wafer to form a second wafer;

measuring a concentration of dopants of the second wafer; and

obtaining the concentration of dopants of the objective thin film by subtracting the concentration of dopants of the first wafer from the concentration of dopants of the second wafer.

2.   The method as claimed in claim 1, wherein the concentration of dopants of the first wafer and the concentration of dopants of the second wafer are measured using X-ray fluorescence.

3.   The method as claimed in claim 1, wherein measuring the concentration of dopants of the first and second wafers comprises:

preparing a look-up-table showing a correlation between concentrations of dopants and intensities of X-ray fluorescence; and

comparing data of the look-up-table with intensities of X-ray fluorescence intensities emitted from the first and second wafers, respectively, to measure the concentrations of dopants of the first and second wafers, respectively.

4.   The method as claimed in claim 3, wherein the look-up-table is prepared by:

recording intensities of X-ray fluorescence emitted from a wafer having a test thin film of the objective thin film while changing a concentration of dopants of the test thin film;

checking whether sufficient data is obtained; and

forming a table of the X-ray fluorescence intensities emitted from the wafer.

5.   The method as claimed in claim 4, wherein forming the table comprises:

writing the concentrations of dopants in a first direction; and

writing the intensities of X-ray fluorescence, which correspond to the concentrations of dopants, in a second direction.

6.   The method as claimed in claim 5, further comprising:

forming a graph, which includes:

representing on a first axis the concentrations of dopants;

representing on a second axis, which is perpendicular to the first axis, the intensities of X-ray fluorescence; and

generating points at intersections of particular intensities of X-ray fluorescence and corresponding concentrations of dopants and connecting the points to form a curve.

7.   The method as claimed in claim 6, wherein the curve is formed by interpolation.

8.   The method as claimed in claim 1, wherein the objective thin film comprises polysilicon.

9.   The method as claimed in claim 1, wherein the objective thin film comprises amorphous silicon.

10.   The method as claimed in claim 1, wherein the first and second wafers have a pattern formed thereon.

11.   The method as claimed in claim 1, wherein measuring the concentration of dopants of the first and second wafers comprises:

preparing a look-up-table including a correlation between thicknesses of test film of the objective thin film and intensities of X-ray fluorescence, and including a correlation between concentrations of dopants and intensities of X-ray fluorescence; and

comparing data of the look-up-table with intensities of X-ray fluorescence emitted from the first and second wafers, respectively, to measure the concentration of dopants of the first and second wafers, respectively.

12.   The method as claimed in claim 11, wherein the look-up-table is prepared by:

recording intensities of X-ray fluorescence emitted from a wafer having a first test thin film of the objective thin film while changing a concentration of dopants of the first test thin film;

recording intensities of X-ray fluorescence emitted from a wafer having a second test thin film of the objective thin film while changing a thickness of the second test thin film; and

forming a table of the intensities of X-ray fluorescence emitted from the wafers having the first and second test thin films.

13.   The method as claimed in claim 12, wherein preparing the table comprises:

writing the concentrations of dopants in a first direction;

writing the thicknesses in a second direction; and

writing the intensities of X-ray fluorescence corresponding to the concentrations of dopants and the thicknesses at a corresponding region.

14.   The method as claimed in claim 13, further comprising:

forming a graph, which includes:

representing on a first axis the concentrations of dopants;

representing on a second axis, which is perpendicular to the first axis, the thicknesses; and

representing on a third axis, which is perpendicular to the first axis and the second axis, the X-ray fluorescence intensities; and

generating points at corresponding X-ray fluorescence intensities, concentrations of dopants and thicknesses, and connecting the points to form a surface.

15.   The method as claimed in claim 14, wherein the surface is formed by interpolation.

16.   A method of controlling a concentration of an objective thin film, comprising:

selecting a first sample wafer;

measuring a concentration of dopants of the first sample wafer;

forming the objective thin film on the first sample wafer to form a second sample wafer;

measuring a concentration of dopants of the second sample wafer;

obtaining a concentration of dopants of the objective thin film by subtracting the concentration of dopants of the first sample wafer from the concentration of dopants of the second sample wafer;

determining whether the concentration of dopants of the objective thin film is within a predetermined allowable range of error;

continuing a process of depositing the objective thin film when the concentration of dopants of the objective thin film is within the allowable range of error; and

modulating the concentration of dopants of the objective thin film when the concentration of dopants of the objective thin film is outside of the allowable range of error.

17.   The method as claimed in claim 16, wherein the concentrations of dopants of the first and second sample wafers are measured using X-ray fluorescence.

18.   The method as claimed in claim 16, wherein measuring the concentrations of dopants of the first and second sample wafers comprises:

preparing a look-up-table showing a correlation between a concentration of dopants and intensities of X-ray fluorescence of test thin films of the objective thin film; and

comparing data of the look-up-table with intensities of X-ray fluorescence emitted from the first and second sample wafers, respectively, to measure the concentrations of dopants of the first and second sample wafers, respectively.

19. The method as claimed in claim 18, wherein the look-up-table is prepared by:

recording intensities of X-ray fluorescence emitted from a wafer having a test thin film of the objective thin film while changing a concentration of dopants of the test thin film;

checking whether sufficient data is obtained; and

forming a table of the intensities of X-ray fluorescence emitted from the wafer.

20. The method as claimed in claim 19, wherein forming the table comprises:

writing the concentrations of dopants of the test thin film of the objective thin film in a first direction; and

writing the intensities of X-ray fluorescence corresponding to the concentrations of dopants in a second direction.

21. The method as claimed in claim 20, further comprising:

representing on a first axis the concentrations of dopants;

representing on a second axis, which is perpendicular to the first axis, the intensities of X-ray fluorescence; and

generating points at intersections of the intensities of X-ray fluorescence and corresponding concentrations of dopants and connecting the points to form a curve as a graph.

22.   The method as claimed in claim 21, wherein the curve is formed by interpolation.

23.   The method as claimed in claim 16, wherein the objective thin film comprises polysilicon.

24.   The method as claimed in claim 16, wherein the objective thin film comprises amorphous silicon.

25.   The method as claimed in claim 16, wherein the first and the second wafers have a pattern formed thereon.

26.   The method as claimed in claim 16, wherein measuring the concentrations of dopants of the first and second sample wafers comprises:

preparing a look-up-table showing a correlation between concentrations of dopants and X-ray fluorescence intensities of test thin films of the objective thin film; and

comparing data of the look-up-table with intensities of X-ray fluorescence emitted from the first and second sample wafers, respectively,

to measure the concentrations of dopants of the first and second sample wafers, respectively.

27. The method as claimed in claim 26, wherein the look-up-table is prepared by:

recording intensities of X-ray fluorescence emitted from a wafer having a first test thin film of the objective thin film while changing a concentration of dopants of the first test thin film;

recording intensities of X-ray fluorescence emitted from a wafer having a second test thin film of the objective thin film while changing a thickness of the second test thin film; and

forming a table of the intensities of X-ray fluorescence emitted from the wafers having the first and second test thin films.

28. The method as claimed in claim 27, wherein forming the table comprises:

writing the concentrations of dopants in a first direction;

writing the thicknesses in a second direction; and

writing the X-ray fluorescence intensities corresponding to the concentrations of dopants and the thicknesses at corresponding regions.

29. The method as claimed in claim 28, further comprising:

representing on a first axis the concentrations of dopants;

representing on a second axis, which is perpendicular to the first axis, the thicknesses; and

representing on a third axis, which is perpendicular to the first axis and the second axis, the intensities of X-ray fluorescence; and

generating points at corresponding intensities of X-ray fluorescence, concentrations of dopants and thicknesses, and connecting the points to form a curved plane as a graph.

30.   The method as claimed in claim 29, wherein the curved plane is formed by interpolation.

31.   A method of measuring a concentration of dopants of an objective thin film, comprising:

measuring an intensity of a first X-ray fluorescence emitted from a first wafer;

forming the objective thin film on the first wafer to form a second wafer;

measuring an intensity of a second X-ray fluorescence emitted from the second wafer;

obtaining an intensity of a third X-ray fluorescence emitted from the objective thin film by subtracting the intensity of the first X-ray fluorescence from the intensity of the second X-ray fluorescence; and

converting the intensity of the third X-ray fluorescence emitted from the objective thin film into the concentration of dopants of the objective thin film.

32. The method as claimed in claim 31, wherein converting the third X-ray fluorescence emitted from the objective thin film into the concentration of dopants of the objective thin film comprises:

preparing a look-up-table showing a correlation between concentrations of dopants and X-ray fluorescence intensities of test thin films of the objective thin film; and

comparing data of the look-up-table with the third X-ray fluorescence emitted from the objective thin film to obtain the concentration of dopants of the objective thin film.

33. The method as claimed in claim 32, wherein the look-up-table is prepared by:

recording intensities of X-ray fluorescence emitted from a wafer having a test thin film of the objective thin film while changing a concentration of dopants of the test thin film;

checking whether sufficient data is obtained; and

forming a table of the intensities of the X-ray fluorescence emitted from the wafer.

34. The method as claimed in claim 33, wherein forming the table comprises:

writing the concentrations of dopants in a first direction; and

writing the intensities of the X-ray fluorescence, which correspond to the concentrations of dopants, in a second direction.

35. The method as claimed in claim 33, further comprising:

representing on a first axis the X-ray fluorescence intensities;

representing on a second axis, which is perpendicular to the first axis, the concentrations of dopants; and

generating points at intersections of the intensities of X-ray fluorescence and corresponding concentrations of dopants and connecting the points to form a curve as a graph.

36. The method as claimed in claim 35, wherein the curve is formed by interpolation.